REMARKS

This Amendment is responsive to the Office Action mailed September 29, 2008. After its entry, claims 1-4 and 9-14 are currently pending in this application and subject to examination. Claims 5-8 are cancelled. Claim 1 is amended to incorporate some of the limitations of cancelled claim 8 and to add a proviso. Support for this proviso is found at page 6, lines 22-27, of the present specification. Claims 2, 4 and 9-13 are amended to render them consistent with the amendment to claim 1. Claims 10 and 11 are amended to recite that the compound of formulae (2) or (3) ***is*** an electron-transport material, rather than ***is employed as*** an electron-transport material. No new matter has been added.

Reconsideration of the application as amended is respectfully requested in view of the following remarks.

Objection to Claim 8

The Examiner objects to claim 8 on the ground that it refers to claim 1 twice. Since claim 8 is cancelled, this objection is rendered moot. Applicants respectfully request withdrawal of this objection.

Rejection Under 35 U.S.C. § 112, Second Paragraph

Claim 9 stands rejected under 35 U.S.C. § 112, second paragraph, on the ground it omits essential elements, specifically, the structures of Examples 1 to 28. Applicants have amended claim 9 to explicitly include the structures of Examples 3-11, 14, 17-24, 27, and 28, which are disclosed on pages 8-11 of the present specification. Applicants believe this amendment obviates the Examiner's rejection and respectfully request its withdrawal.

Claim 7 stands rejected as indefinite. Since claim 7 is cancelled, this rejection is rendered moot. Applicants respectfully request withdrawal of this rejection.

Rejection Under 35 U.S.C. § 102(b)

Claims 1-8 and 10-14 stand rejected as anticipated by U.S. Patent App. Pub. No. 2003/0008174 A1 to Suzuki et al. (Suzuki). Claims 1-8, 10, and 12-14 stand rejected as anticipated by JP 06/192654 A to Kikuchi (Kikuchi). Claims 1-5, 7, and 10-14 stand rejected as anticipated by U.S. Patent App. Pub. No. 2003/0168970 A1 to Tominaga et al. (Tominaga). These rejections are moot as to claims 5-8, which are cancelled. Applicants respectfully traverse in view of claims 1-4 and 10-14, as amended.

Suzuki

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *See* MPEP § 2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Suzuki fails to anticipate claims 1-4 and 10-14, as amended, since that reference does not disclose a compound having a structure of Formulae (2) or (3). The Examiner asserts that Suzuki, at paragraph [0020], discloses a compound having a structure of Formula (3). However, as is clear from this structure (formula (III)), the three benzene rings substituted by R_1 through R_{12} therein are required to be bonded to the central benzene ring, resulting in three five-membered rings fused to the central benzene ring. In contrast, there is no bond between R^2 and Ar in the structure of Formula (3) recited in amended claim 1, and, thus, no ring is formed between these groups. As such, Suzuki does not disclose a compound having a structure of Formula (3). Since Suzuki neither expressly nor inherently describes each and every element of claims 1-4 and 10-14, as amended, these claims are not anticipated by this reference and, thus, are novel and patentable. Applicants respectfully request withdrawal of this rejection.

Kikuchi

Kikuchi fails to anticipate claims 1-4, 10 and 12-14, as amended, since that reference does not disclose a compound having a structure of Formulae (2) or (3). The Examiner asserts that Kikuchi, at paragraph [0013], discloses a compound having a structure of Formula (2).

However, as is clear from this structure (compound (11)), the central aromatic group linking the two carbonyl groups consists of three fused benzene rings. In contrast, amended claim 1 now excludes fused aromatic ring systems having three or more fused benzene units from the definition of Ar. As such, Kikuchi does not disclose a compound having a structure of Formula (2). Since Kikuchi neither expressly nor inherently describes each and every element of claims 1-4, 10 and 12-14, as amended, these claims are not anticipated by this reference and, thus, are novel and patentable. Applicants respectfully request withdrawal of this rejection.

Tominaga

Tominaga fails to anticipate claims 1-4 and 10-14, as amended, since that reference does not disclose a compound having a structure of Formulae (2) or (3). Tominaga neither expressly nor inherently describes each and every element of claims 1-4 and 10-14, as amended, these claims are not anticipated by this reference and, thus, are novel and patentable. Applicants respectfully request withdrawal of this rejection.

Rejection Under 35 U.S.C. § 103(a)

Claims 1-10, 12, and 14 stand rejected as obvious over U.S. Patent No. 5,755,999 to Shi et al. (Shi) in view of WO 2004/093207 A2 (U.S. Patent No. 7,645,301 B2) to Gerhard et al. (Gerhard). These rejections are moot as to claims 5-8, which are cancelled. Applicants respectfully traverse in view of claims 1-4, 9, 10, 12, and 14, as amended.

Shi in view of Gerhard

The Examiner asserts that the skilled artisan would have found it obvious at the time of the invention to combine the host material of Gerhard with the device of Shi because, *inter alia*, the skilled artisan would reasonably expect such a combination to be suitable given that "the host material of Gerhard is taught to be suitable for use in electroluminescent devices and is also taught to be suitable for use with luminescent compounds that contain an element with an atomic number greater than 20." Applicants respectfully disagree. The skilled artisan would not have found it obvious at the time of the invention to combine the host material of Gerhard with the

device of Shi because the skilled artisan would not reasonably expect that aromatic ketones could be successfully used with fluorescent emitters.

Shi discloses a fluorescent OLED, but does not disclose the use of a ketone as the host material for the ***fluorescent*** emitter or as the electron transporting material. In contrast, Gerhard teaches the use of ketones as host material for ***phosphorescent*** emitters. In view of this, Applicants have informed the undersigned of the following:

Aromatic ketones (such as the simplest aromatic ketone, benzophenone) are known in the art to exhibit an extremely fast and efficient intersystem crossing from an excited singlet state to the triplet state. As evidence of this, please find attached as Exhibit A the article authored by Aloise S., et al., titled "The Benzophenone $S_1(n,\pi^*) \rightarrow T_1(n,\pi^*)$ States Intersystem Crossing Reinvestigated by Ultrafast Absorption Spectroscopy and Multivariate Curve Resolution," *J. Phys. Chem. A*, Vol. 112, pp. 221-231 (2008). Even though published in 2008, the introduction of this article summarizes the general knowledge in the art with respect to benzophenone intersystem crossing. Benzophenone does not exhibit fluorescence (*i.e.*, do not show emission from a singlet excited state). If materials of this kind are used in combination with a fluorescent emitter (*i.e.*, an emitter, which shows emission from a singlet excited state), the skilled artisan would not expect efficient energy transfer from the excited ketone to the singlet emitter. Typical energy transfer processes in OLEDs are the so-called Dexter transfer, which is an energy transfer between triplet states. However, the energy transfer between a singlet excited state and a triplet state usually has a very low efficiency. Therefore, the skilled artisan would expect an OLED comprising a fluorescent emitter (*i.e.*, a singlet emitter) and a ketone to show a very low emission efficiency and would expect quenching of the emission by the ketone. The same is true when the ketone is used in an electro-transporting layer, which is adjacent to the fluorescent emission layer.

To establish *prima facie* obviousness of a claimed invention, there must be a reasonable expectation that the combination of the prior art would be successful. *See* MPEP § 2143.02 (citing *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986)). In view of the remarks *supra*, the skilled artisan would not have reasonably expected the combination of the

host material of Gerhard with the device of Shi to succeed. As such, the Examiner has failed to establish claims 1-10, 12, and 14 as *prima facie* obvious. Since claims 1-10, 12, and 14 are non-obvious and patentable, Applicants respectfully request withdrawal of this rejection.

Tominaga

Since claim 8 is cancelled, this rejection is rendered moot. Applicants respectfully request its withdrawal.

Obviousness-Type Double Patenting Rejection

Claims 1-10, 12, and 14 stand rejected on the ground of nonstatutory obviousness-type double patenting as unpatentable over claims 1-6 and 15-18 of U.S. Patent No. 7,345,301 B2 to Gerhard et al., which issued on March 18, 2008, in view of Shi. In response, Applicants file concurrently herewith a Terminal Disclaimer disclaiming the terminal part of the statutory term of any patent granted on the present application which would extend beyond the expiration date of the full statutory term of U.S. Patent No. 7,345,301 B2. Applicants believe this Terminal Disclaimer obviates this rejection and respectfully request its withdrawal.

Paragraph 11 of the September 29, 2008 Office Action

Applicants are unclear whether this paragraph is a rejection that requires a response and, as such, respectfully request clarification by the Examiner. Applicants intend to respond, if necessary, after receipt of such clarification.

In view of the foregoing amendment and remarks, Applicants believe the pending application is in condition for allowance.

Submitted concurrently herewith is a Petition for a One-Month Extension of Time pursuant to 37 C.F.R. § 1.136, as well as payment in the amount of $130.00 to cover the fee required by 37 C.F.R. §1.17(a) for this extension of time. Should any other fees be required in connection with this Amendment, the Director is hereby authorized to charge any fees due or outstanding, including any extension fees, or credit any overpayment, to Deposit Account No. 03-2775, under Order No. 14113-00051-US, from which the undersigned is authorized to draw.

Dated: January 29, 2009

Respectfully submitted,

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